

HELP SCREEN

THIS IS JUST THE TIP - THE GREAT MASS IS BELOW

'He that increaseth knowledge increaseth sorrow', or so Ecclesiastes believed, but he's dead now so we'll ignore him. Welcome to *Help Screens*, where we prefer the words of Christopher Marlowe, 'There is no sin but ignorance'. In these pages we will increase your knowledge without increasing your sorrow while simultaneously freeing you from sin - no other magazine can do this.

And now, on with the show; first the caveats. Although we can't relieve you from sin on a personal basis we will try to acknowledge letters that arrive with an SAE. We also can't accept phone calls.

But we want your input. If you're a newcomer to the super soaraway world of PCs then you may need a helping hand over the rough parts - feel free to ask. All questions welcome, the answers are usually relevant to many others.

The experts among you can use these pages to pass on a little learning. Perhaps even to show off a little. See your name in print and gain some fame all in exchange for a few lines of hard won wisdom. There are going to be tricks you've learned to use that make your life easier. Let others know the problems and the solutions - they're often solutions to other problems as well.



This symbol indicates a query or a tip from someone just starting out with the PC. Either someone for whom all computing is new or perhaps a reader moving up from a different machine. Either way it should be self explanatory.



This is the hackers' haunt. Nothing is too technical for this section. Some may find it more baffling than enlightening but it offers something to get your teeth into.



Just because you use your PC every day doesn't mean you're not occasionally going to be baffled. This is the heading for tips on batch files, pop-ups and utilities.



Danger area! Some of these tips can lead to tears before bedtime. Handle them with extreme caution and remember, PC PLUS can't be held responsible for any data loss or other damage - you have been warned!



This indicates a letter concerning the PC PLUS SuperDisk. Advice on using the various programs and new twists to old favourites.

INCOMPATIBLE



I am running an Epson AX3S 386SX computer with 2 Mbyte of RAM, a VGA monitor, an IBM PS/2 mouse and MS-DOS 4.01. With this I have Windows 3 and a Hewlett-Packard Scanjet Plus. I cannot run the scanner software under Windows 3.

Neither Microsoft nor Hewlett-Packard have been able to offer any explanation or solution - both merely pointing out that they are able to run the Scanjet software (Scangal) under Windows 3. It runs perfectly well under the Windows 286 runtime module supplied but reports communications errors under Windows 3 before refusing to continue.

This letter is principally addressed to Hewlett-Packard and Microsoft. I feel that those who supplied the merchandise share a responsibility to resolve the problem. It is addressed to PC PLUS because I have admired the way they have assisted readers in the past and hope they have a positive input to the problem.

Trevor Aiston
Wokingham Infirmary
Wokingham

I've run Scangal on an SX attached to a Scanjet Plus under Windows 3, so I know it can work. There are several things to try; the first thing is running the hardware and software on another PC, then with a new cable, then with another interface board, and finally a new scanner. I know it shouldn't make a difference but it often does.

Anything that goes in at a low level (like Windows 3 and Scangal) can have unforeseen incompatibilities with hardware. I'd be surprised if you couldn't find a PC it will run on - though I hasten to add that

there is nothing actually wrong with Epson kit. Alternatively, run it under the Windows 286 runtime, which I know also works perfectly well.

The solution for any buyer who needs a combination of hardware and software from several manufacturers working right now is to pay a dealer to supply a working package. Get it demonstrated up and running on site before parting with any cash.

PORTABLE POWER



I have recently bought an Amstrad PPC640D and am looking for a hard disk for it. Is it possible to fit one myself. While I know you are reluctant to specify particular dealers, any pointers would be appreciated.

Martin Parker
BFPO 641

In this case I don't mind recommending a supplier. I only know of one source of internal hard disks for the PPC range, Stratum Technology, on (0734) 441236. We reviewed the complete PPC upgrade in issue 40 - it's good.

APRICOT PUREE



I have an Apricot F1 Portable, which uses MS-DOS 2.11. After using this version of MS-DOS for a while I decided to upgrade and bought 3.0 (for the Apricot Xi). The problem is that when I attempt to boot up I get the error message 'Incorrect DOS version'. I'm told that this is due to the ROM BIOS - version 1.6.

Is there anywhere I can obtain a BIOS upgrade so that I can run run 3.0 and GWBASIC?

Geoff Eklund
East Retford

As you've discovered, the F1 series are MS-DOS machines but not IBM-compatible machines. They have rather different hardware underneath the software, and so much PC software writes to the hardware directly that rather few PC programs will run on it. However, F1s make good comms terminals and rather nice word processors. If you have a suitable use in mind they are usually a bargain.

I talked to Apricot, who comments that the problem is nothing to do with the BIOS, it's simply that Microsoft never wrote Apricot a version of MS-DOS later than 2.11. The only company still offering application software for the non IBM-compatible Apricot MS-DOS machines is Sierra Systems on 037-272 2890. This company has all Apricot's original operating system disks as well.

For utilities you might try Ansible Information (0672) 62576, which is one of the few companies who still write software for these machines.

HUMBLE PIE TIME



In the December issue one of your readers had a small problem with WordStar 3.3, the files no longer displayed in alphabetical order. You suggested running WSCCHANGE to modify the directory display defaults.

Your answer would have been fine under version 4.0 of the program but 3.3 simply doesn't include the WSCCHANGE utility. Contrary to your response there are over 300 changes between WordStar 3.3 and 4.0. 3.3 uses the WSINSTALL program to modify defaults.

However, the real problem is the limit on the number of files that 3.3 could alphabetise. I believe the limit is around 100 files - once this is reached

there's not much you can do about it. Later versions don't have this problem.
John Tuohy
Technical Support Manager
WordStar

Not a lot people knew that – until now, thanks for straightening it out.

FILE IN THE BIN



Some 18 months ago I upgraded my Amstrad 1640 with a Western Digital filecard from Evesham Micros. This worked admirably until last month when it failed to function correctly. When I power up my PC I get a loud grating noise from the filecard, the computer shows an error code of 1701. At this point I can only continue by loading MS-DOS from a floppy disk. The filecard has only been used for personal recreational purposes.

Evesham can only suggest writing to Western Digital in California or buying another filecard (at a discount).

Has this problem been encountered by others?

Would there be any point in writing to the manufacturer – taking into consideration the low usage and the projected life of five years?

Is the drive repairable? If I need a new drive which would you recommend?

D A Dix
Swaffham

Western Digital filecards are enormously popular, largely due to the low price and the ease of fitting. But as in all things you get what you pay for. These are an old Western Digital design (to be discontinued in the new year). They aren't as reliable as more modern designs. I get a lot of mail from owners of dead filecards and the average age of the deceased is around two years. At that rate it's costing approximately a pound a week – not too bad.

Hard disks come with claims of 20,000 to 30,000 hours MTBF (Mean Time Between Failures). This refers to data errors that get through, and not to how long the drive is expected to last. At ten hours per day less weekends, the MTBF figure gives six years. However, a more reasonable estimate of hard disk life is between three and five years depending on quality. Considering that the platter is spinning at 3,000 RPM all the time it's turned on that seems quite good. Clearly, the more you pay the more reliable you'd expect the drive to be – as with all engineering.

The error code 1701 usually means that the controller card is working but the physical drive isn't, a surmise confirmed by the grating noises you can hear. It's rarely worth repairing a hard disk.

On the other hand it's always worth writing to a manufacturer. How else will they know whether they're pleasing customers? The UK headquarters is at:

Western Digital
Old Manor House
19 West St
Epsom
Surrey KT18 7RL

It's interesting to note that hardcards seem to be going out of fashion. Manufacturers now seem bent on putting the control electronics on the motherboard or including them on a multi-function drive controller card and fitting a separate hard disk. Nevertheless, there are still a few alternatives left. We'll be doing a round up in the new year.

ROLLING PAGES



Firstly, can you tell me why, when printing out DOC (documentation) files, the printout keeps creeping up the page until each page in the DOC file is overlapping the physical pages instead of them having a neat one-to-one relationship? I use COPY

CONFUSED MEMORY



I have recently purchased a 386 20Mhz computer with 40 Mbyte hard drive. It is very good apart from one small problem. I do not know how to use the 640K base RAM with the 2 Mbytes of extended RAM together.

The first MByte is used as shadow RAM and at the moment the other megabyte is used as a RAM drive. Can you help me convert the extended memory to base RAM?

J Thanki
Northampton

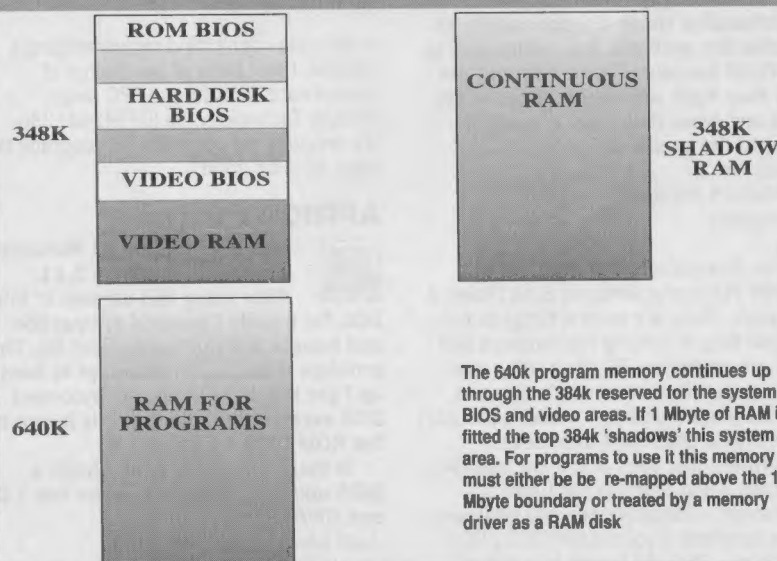
I'm afraid not, for historical reasons. The way the PC uses memory is enough to confuse anyone. On other computers it's usually just a continuous area that can be used by the operating system for programs – not so on the PC. However, there are two separate problems in your letter.

The first problem is that posed by MS-DOS. This operating system can only access 1 Mbyte of RAM. That limitation is built into MS-DOS and can't be changed. Other operating systems for PCs, like OS/2, Unix or Pick, don't suffer from the same limitations – but, by and large, they also won't run your favourite programs. The reason why PCs come with more than 1 Mbyte of RAM these days is because, while MS-DOS can't use the extra memory, many programs can. Like so many PC programs they simply bypass the operating system to get at the extra memory.

The IBM PC was designed so that the first 640K (of the 1 Mbyte) is reserved for programs while the top 384K is reserved for the hardware. This is where screen memory and all the ROM BIOS (for the PC and its various adaptor cards) lives. A PC with more than 640K of RAM installed has two lots of memory that share the same address space (630K to 1 Mbyte usually). This memory is often used as shadow RAM. What this means is that the programs in the ROM chips are copied into RAM at the same addresses. When a program needs one of these ROM BIOS routines the request is rerouted to the copies in RAM, where the routines will run much faster.

Extended memory is nothing special in hardware terms – it's just memory that carries on where the rest leaves off. However, for MS-DOS programs to access it it usually has to appear to be something different, like a RAM disk for example. It can also pretend to be Expanded memory. This is a memory standard used by programs to switch sections of memory in the 640K area with sections not normally accessible. This used to depend on hardware in the early days of the PC but can be simulated easily by Extended memory.

A few programs can actually run in Extended memory by switching the 80386 processor into a special mode, called Protected Mode, a mode in which MS-DOS can't run. In order for it to appear that everything is normal these programs create lots of little 640K areas to run MS-DOS programs in (virtual machines). Windows 3 does this. There is no way to make the 640K area bigger in order to better run MS-DOS programs – the best that can be done is to store their memory image there while they aren't needed and then load them back into the 640K area real fast when they are.



The 640k program memory continues up through the 384k reserved for the system BIOS and video areas. If 1 Mbyte of RAM is fitted the top 384k 'shadows' this system area. For programs to use it this memory must either be re-mapped above the 1 Mbyte boundary or treated by a memory driver as a RAM disk

UNPROMPTED



This batch file lets you interactively build a full colour prompt at the top of the screen containing the path and anything else you like.

You still get the normal C:> prompt as well.



```
echo off
cls
if "%1"==" " goto noparm
prompt $e[s $e[%1;%2m $e[1;1H$e[K$%3 $%4 $%5 $%6 $%7 $%8 $%9 $e[0m$e[u$%n$g
echo.
echo If you want kto make this prompt permanent include the following
echo line in your AUTOEXEC.BAT file after removing the empty $.
echo.
echo prompt $e[s $e[%1;%2m $e[1;1H$e[K$%3 $%4 $%5 $%6 $%7 $%8 $%9 $e[0m$e[u$%n$g
echo.
goto end
:noparm
echo No parameter specified. Usage: PRMTOP p1 p2 p3 .... p9
:end
```

To use it type:

PRMTOP p1 p2 p3

You must have p1 and p2 at least. These specify the foreground and background colours as listed below - they must be included.

Foreground		Background
30	black	40
31	red	41
32	green	42
33	yellow	43
34	blue	44
35	magenta	45
36	cyan	46
37	white	47

The following numbers can replace p1 or p2 numbers:

0	white on black
1	bold
4	underline (mono only)
5	blink
7	black on white

All the other parameters (p1 to p9) are optional. They can be any character or word. The following characters have special effects:

t	time
d	date
p	active directory
n	active drive
g	>
l	<
q	=
b	
h	backspace

Text or messages should be preceded by an X, both to avoid the effects above and since the first character is always lost anyway. Spaces in messages should be created by holding down the [Alt] key and typing 255.

You must have ANSI.SYS loaded for this to work. Make sure there is a line:

DEVICE=C:\ANSI.SYS

in your CONFIG.SYS file. The path to it may be different from the above example and should reflect the way your own machine is set up.

R Raveendran
West Croydon

Very nice. I liked this, especially the fact that you can run and alter it any time you like. Also that the batch file tells you how to make the effects permanent. This means that users can experiment quickly and easily to find a prompt they like.

ANSI.SYS doesn't get used by much commercial software, though it very popular with batch file writers and amateur programmers. The problem for programs that use it is that they can't be sure anyone else will be running it. If ANSI commands are issued and it isn't there screen displays tend to look ridiculous.

Of course, you've already won a copy of BATCOM - no seconds, but I'm sending you £10 for sheer thoroughness. Since I'm getting so many good batch files in I've decided to use more than one a month, though I'm still only offering one copy of BATCOM per month. This will continue to be awarded on totally subjective criteria.

FILENAME.DOC PRN to print out.

Secondly, can you tell me how joysticks work? I have tried two and cannot get them to work. I place the card in, plug into the port on the card but no joy, only stick. What is this calibration that's banded about?

T Jones
Taunton

The files you're printing are, presumably, the DOC files that come with public domain and shareware programs. These are almost all American in origin so the DOC files are formatted for 11-inch by 8-inch paper, the kind you usually get if you buy continuous tractor feed listing paper. If you print to single-sheet British A4 (which is 11 and two thirds inches long) the printout will start two thirds of an inch further up the paper on every sheet after the first.

Now to your second query. Joysticks are an afterthought on the PC. The IBM games port will work with analogue or switched joysticks. Analogue joysticks return a voltage which depends on how far the stick is moved. Switched types simply report left/ right/ up/ down.

For anyone who wants to know, the game port is read via Interrupt 15H, service 84H. If called with DX=00H you get the four digital switch positions in bits 4 through 7 of register AL. If the service is called with DX=01H then you get the resistive (analogue) values of the joystick in registers AX, BX, CX and DX.

Calibration is necessary as each analogue joystick will have slightly different characteristics. Generally, before playing, a game will ask you to move the stick in each direction as far as it will go in order to determine the minimum and maximum values returned.

SLOW DOWN THERE



Steve Lawson's slow-down problem with his Amstrad PC1640 (December 90) is

probably not a bug but a friendly rodent - the Amstrad mouse. MOUSE.COM seems to alter the clock rate so that it can read the mouse X and Y count buffers three times as often. It then regears the the user timer tick back to the normal 18 times per second. Other programs try to do the same thing with the result that the PC1640 slows down. This effect was reported in Andy Wilton's Code Segment column in June 1989. My solution is not to install MOUSE.COM except while running GEM.

G R J Baldwin
Weybridge

I think you're right. I'd foolishly assumed that the mouse problem was familiar to everyone, but why should it be? What happens is that MOUSE.COM grabs the clock tick, ups it to far more than eighteen per second and then passes on just enough to keep the system clock clock running right. There's no problem, just so long as nothing else starts trying to do the same sort of thing.

Well, there are always problems. Many programs use the timer tick to give them momentary control (18 times per second)

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regardless of what's happening. They look around, see if they have to do anything and either do it or go away again. This makes the timer tick routine take longer to complete. If enough programs do it then the whole machine will appear to run slower. In fact it will be running slower since it takes longer to run the same foreground program.

The other problem only affects the speed of the system clock. If a second program (after MOUSE.COM) speeds up the clock tick and then resets it on exiting, MOUSE.COM won't know it's been reset and will continue passing on a reduced number of ticks – hence the clock will run slowly.

There are utilities to fix this problem. Unfortunately, Amstrad's attempt doesn't work correctly. You could try TICKRATE, from The Independent PC User Group (0732) 771512. It costs £5 or £5.50 (inc postage) depending on disk size and comes with a host of other utilities for PC1512 and PC1640 owners.

To see a rather dramatic clock effect try this short routine to alter the tick. It speeds it up by a factor of 256. If you've any program handy that shows a clock live on screen run it after running CLICK.COM below.

```
NCLICK.COM
RCX
10
A
CLI
MOV AL,36
OUT 43,AL
MOV AL,0
OUT 40,AL
MOV AL,1
OUT 40,AL
STI
RET
```

W

Q

Make an ASCII file of the script above and feed this into DEBUG with the line:

DEBUG < CLICK

You may have to reset your PC after running this routine – its effects are a bit too awesome to allow normal working with some programs.

HEAD CASE



When I first purchased a hard card I was told only to park the heads when moving it. Then the hard disk went wrong and I had to replace it.

I now own an Amstrad PC2086 – should I park the heads when I switch off? Please set the record straight as I hear so many conflicting opinions.

D Jones
Broadstone
Dorset

Yes, use the PARK utility provided by Amstrad. In general, if there is any way to park the heads, then park

284

IN SHADOW



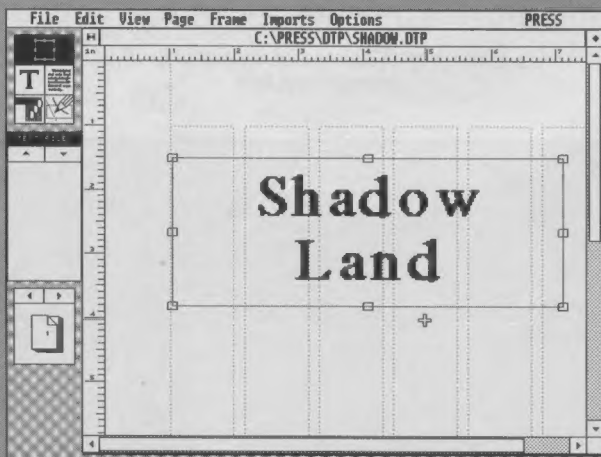
Some more tips to add to your TimeWorks collection, though these will work just as well with DeskPress. Special effects on headers can be produced by overlaying multiple boxes.

A J Mitchell
Chelmsford

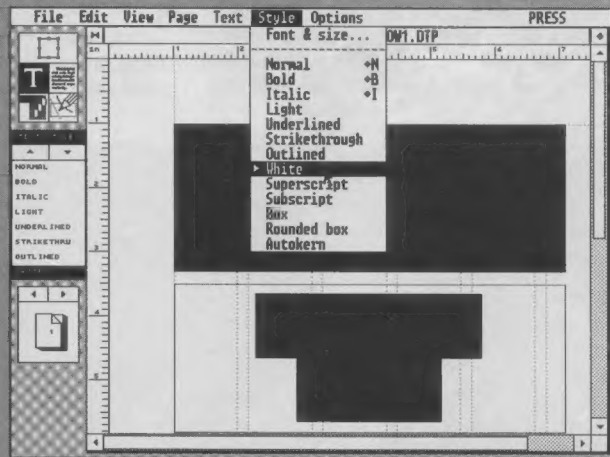
Having accidentally deleted all my TimeWorks fonts (I'll sort it out real soon now) I used DeskPress to illustrate your tip. The process is so similar in both packages that it makes virtually no difference. The main change I made was to turn off Snap to Grid since I found it hard to get the positions I wanted. The same process would work in Ventura too.



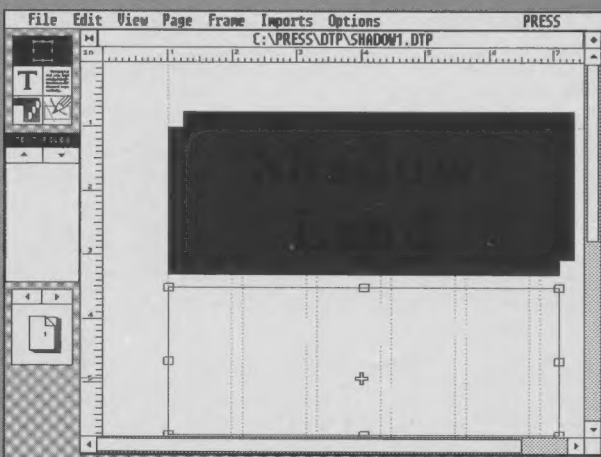
HELP SCREEN



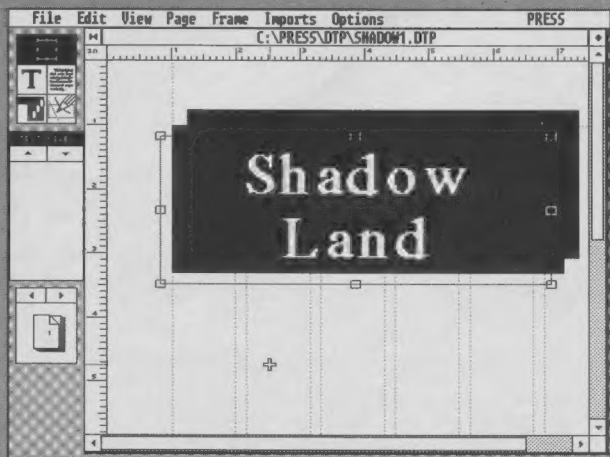
1. Create a box of the required size. This should have the following attributes: repel text off, transparent, no tint, no frame. Snap to grid should be set to off. Write the text in and assign it the required font and size and style



2. Copy the first box and paste in a new copy. The new copy should have a frame border set and a tint – around fifty percent. Make this box opaque. Finally, go back to the original box and make the text white



3. Paste in the box a second time – there are now three on the page. Make this third one black and send it behind the box with the tint. This option is on the frame menu. Position it so that it produces a shadow effect



4. The last step is to place the original box (now with white text) over the other two. This gives the effect of the white text hanging in space. Other shadow effects are achieved using in a similar manner

them. Normally this is done using a small utility (supplied with the hard disk) called PARK, PARKD or PARKER. Landing the read/write heads on the data area of the disk surface can damage it. Why take the risk?

Some disk drives are self parking. These are known as Voice Coil Actuated drives. Once power is removed the heads, which are on springs, are automatically pulled back to the edge of the disk. These drives are more expensive. You'll probably know if you have one as every time you switch off the PC you'll hear a whirring noise and a delicate thump as the arm carrying the heads hits its stops.

ON THE BLINK



Some of the public domain and shareware programs I have used blinking characters on my EGA screen, which I find very distracting. Is there any way to stop them from doing this?

Lawrence Davies
Swindon

Absolutely, if there's one thing worse than a blinking character its two blinking characters. Moreover, it's waste of resources. On a colour monitor there are sixteen possible background colours but only eight foreground colours – the other eight are the blink attribute instead.

On EGA and VGA monitors blinking is enabled and disabled by a video Interrupt which sets a bit in a register on the video adaptor card. This is enabled by the BIOS at boot time. However, there's nothing to stop

you turning it off again. You could do this directly using OUT commands but Interrupt 10H, service 10H, subservice 03H does it for you. If BL is 00H blinking is disabled and if its 01H then it's enabled. This little DEBUG listing will do the job.

```
NBLINKOFF.COM
RCX
OD
A
MOV AH,10 ;PUT HEX 10 IN AH
MOV AL,03 ;SUBSERVICE 3
MOV BL,00; ;DISABLE BLINK
INT 10 ;INVOKE INTERRUPT
MOV AX,4C00 ;QUIT- ERRORLEVEL 0
INT 21 ;GO HOME
```

W
Q

Use a text editor or word processor in non-document (ASCII) mode to create a file (called BLINKOFF) with the instructions above – you don't need the comments. Feed it into DEBUG with the instruction:

```
DEBUG < BLINKOFF
```

That should cure those blinking hues. For those who want to turn it on and off in a higher level language these two C functions should suffice.

```
blink_off()
{
union REGS temp;
temp.h.ah=0x10;
temp.h.al=0x03;
```

```
temp.h.bl=0x00;
int86(0x10,&temp,&temp);
}
```

```
blink_on()
{
union REGS temp;
temp.h.ah=0x10;
temp.h.al=0x03;
temp.h.bl=0x01;
int86(0x10,&temp,&temp);
}
```

TRANSFER FEES



I have been using Protext on the Amstrad CPC 6128 for several years to produce company documents and letters at home. This has worked well but for several reasons I have now moved on to an IBM PC and Protext 5.0 at work. This uses 5.25-inch disks. The problem is how to quickly and easily transfer files between the 3-inch CPC disks the PC disks. I need to do this on a daily basis. What do you advise?

D P Mogg
Alton
Hampshire

Talk to Microstyle on (0274) 636652. This company sells a 3.5-inch drive for £79.95 and the 2 in 1 software to read and write to MS-DOS disks from the CPC – £24.95 – both prices plus VAT. This may entail you adding a 3.5-inch driver to your PC, or, alternatively, Microstyle might well supply a 5.25-inch disk instead of the 3.5-inch normally supplied.

DON'T DELETE



This is a batch file called DELBNOT.BAT (Delete, but not...). It deletes every file in the current directory except those you specify on the command line. It even accepts wildcards so you could type:

```
DELBNOT *.EXE *.COM
```

and have all the files except COM and EXE files deleted.

As you can see it accepts multiple parameters and saves all that mucking about with DEL commands. It will run from any directory as long as it's in the path. However, ATTRIB.EXE not also be in the path since it uses this to protect the files you wish to keep. The batch file will warn you if it thinks you might be in the root directory.

```
ECHO OFF
REM Were there any filenames given?
IF "%1==" GOTO FILENAME
REM
REM Check if DELBNOT.BAT is in the directory being deleted. If so
REM Make DELBNOT.BAT itself protected from deletion during process.
REM
IF NOT EXIST DELBNOT.BAT GOTO WARN
ATTRIB DELBNOT.BAT +R >NUL
:WARN
REM
ECHO *** WARNING - THIS UTILITY WILL ERASE ALL FILES EXCEPT
ECHO THOSE SPECIFIED: AFTER ITS OPERATION RESET ANY "READ
ECHO ONLY" ATTRIBUTES DESIRED WITHIN THIS DIRECTORY. ***
REM
REM Check for COMMAND.COM - it could be the Root Directory
REM
IF NOT EXIST COMMAND.COM GOTO LOOP
REM
ECHO *** WARNING - YOU MAY BE IN THE ROOT DIRECTORY OF
ECHO YOUR DISK: WE WILL NOT DELETE "COMMAND.COM" ***
ATTRIB COMMAND.COM +R >NUL
:LOOP
REM
```

```
IF "%1==" GOTO COMPLETE
IF NOT EXIST %1 GOTO NOFILE
REM
REM Protect files to be kept by marking them read-only
REM
ATTRIB %1 +R >NUL
REM
REM Get next filename
REM
SHIFT
GOTO LOOP
GOTO COMPLETE
:FILENAME
REM
ECHO No filename specified.
ECHO Syntax is: DELBNOT filename filename...
GOTO END
:NOFILE
REM No such file. Display error message.
ECHO %1 does not exist. Check file
GOTO END
:COMPLETE
REM All specified files now PROTECTED
REM Delete Remainder with chance to change your mind.
REM
DEL *.*
REM
REM Unprotect remaining files to be kept.
REM
ATTRIB *.* -R
ECHO *** REQUEST COMPLETE ***
:END
```


Paul Singer
Westcliffe on sea

I know its longer than some other winners but it really has to be – anyway, it's a worthy winner. I like the creative use of the ATTRIB command. I also like the use of SHIFT and a loop to enable the processing of a variable number of filenames. One thing to watch is that files which may have had the Read Only attribute set before the batch file is run will not have it set afterward. One copy of BATCOM on its way to you courtesy of Ctrl-alt-Deli.



HOPPING MAD



 There was a program called **HOPALONG** on the March SuperDisk. I can produce some fine patterns on screen using this but when I try to print them out all I get is black and white. I am using an Amstrad PC1512 and a Star LC-10 colour printer. I am aware that when run **HOPALONG** states that it needs a colour adaptor. Does this mean I need an extra adaptor for my PC?

J G Callaghan
St Peter Port
Guernsey


The colour adaptor referred to is the video adaptor. It just means that you must have a colour screen attached to your PC, which you have. The printing problem is separate.

Most printers until very recently have only been black and white. As a result very few programs on the PC support colour printing – including, oddly enough, most paint programs. HOPALONG doesn't support colour printers – which means that it knows nothing about your LC-10's colour capabilities and simply treats it as a black and white printer.

One advantage of programs that

WINDOW WONDERS



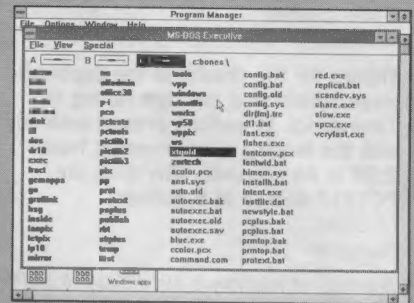
 The File Manager in *Windows 3* is slow when used for browsing through a hard disk, doing simple disk management chores or for running programs not installed in *Windows 3*. It makes you long for the old *Windows 286* front end. Well, it's there. It's called *MSDOS.EXE* and it's very much quicker than File Manager.

Using file manager look in the \WINDOWS directory and drop MSDOS.EXE into a Program Group, or install it from the menus. Either way you get the familiar floppy disk icon and the original, fast front end. I guarantee that it will be used ten times for every use of the lumbering File Manager.

Also, did you know that you can use any icon from any program that contains them for any other program? This is especially useful for non Windows programs that don't have icons of their own. To do this select Properties from the File menu, click the Change Icon option of the Select Icon dialogue box. The application name will

already be there. Change this for the name of any program with icons and cycle through them until you find one you like. Click on OK and your application will have that icon from then on.

G K Garwood
Bodmin



● For fast file displays under *Windows 3* forget File Manager and use MSDOS.EXE instead

WISDOM OF SOLOMON

Dr Alan Solomon presents a moving story, laments the lack of a good Pascal for OS/2 and muses on portable PCs.



If you think that moving offices is easy, that's either because you've never done it, or else you don't have a network spreading its tentacles throughout the building. My little plot to be in Australia when the move was due failed, but succeeded sufficiently for me to find that my desk had already been cleared, and was being inhabited by someone else when I came in.

Moving a network is a real headache; we're still not sure exactly how we're going to cable up the new place, and the fact that we use a Token Ring and an Ethernet network doesn't make things any easier. Should we use an MAU and two LRHs, or two MAUs – that is only one of the questions.

There's a proposal that we go entirely Ethernet, and others of us that are staunchly favouring the Token Ring. And then there's backup; this is currently done to half-inch tape, but the queue for using the drive is quite long sometimes – should we look at helical scan tape, or get another half-inch drive? And finally, the software that we use for the database; since the Sparkling Marsupials nom-de-data was unmasked, you'll know that we use *Dataease*, but I want to go to a client-server based system. *Dataease* has brought out the front end half of that, so all we need is a back end. I intend looking at the *Microsoft SQL Server*, and *Oracle*, with a mainframe pedigree.

OS/2 DEMANDS

OS/2 is staring me in the face – people keep asking me for things in OS/2, and you need to write your programs in C to do that, don't you? No, actually. I had hoped that *Turbo Pascal 6.0* would give OS/2 support, but it doesn't, so I'm looking around. Possible candidates are *Pecan Pascal* (which runs on all sorts of platforms – tel. (0272) 425012 and *Prospero Pascal*, which has an OS/2 version (costing a mere £320 – tel. 081 741 8531). Anything rather than C (ducks to avoid the bricks thrown by avid C programmers). It was a disappointment to me that *Turbo Pascal 6.0* doesn't let you write OS/2 programs, but there is a lot of interesting new stuff in it, such as a library called *Turbo Vision*, which gives you things like scrollable, moveable, resizable windows.

and all the other things that make a program look really professional.

LUCKY DIP

I see that you can now get a 20 Mbyte hard disk for your Dip; someone in the States has launched this for \$900, including 512K of RAM. It fits underneath the Dip, and turns it into a full-power machine. I've been using a 286 notebook machine, and the problem is battery life. One or two hours after using it the batteries need recharging, because of the drain from the hard disk and the screen. If only battery technology was up with the rest of the system.

HOLE IN TWO

Last week, I had three diskettes sent to me for inspection; they all had a problem that the owner didn't even know about. They were 1.44 Mbyte diskettes (two square holes in the corners of the case), but formatted to 720K. The problem is, a 720K diskette is 300 Oersted's coercivity, and a 1.44 is 600. That means that the 1.44 is twice as difficult to magnetise as a 720, so you apply twice the write current. But if you format it to 720, you don't apply enough write current to do the job properly, and the signal fades, leading to data loss later. Please try to ensure that 720K diskettes (one hole) are only formatted to 720K, and 1.44 Mbyte are formatted to 1.44 Mbyte. I hear that 2.88 diskettes and drives will be out soon; heaven knows what the situation will be then.

GOING DOWN

I recently saw an advertisement for a 486 motherboard for £1,350. It won't be long before you can buy a 486 computer for under £1,000, and then all the people that have been fancying one for their birthday, stand a reasonable chance. You might think that absurd, but Morgans are still selling their 386, with hard disk, for £600. Where will it all end? Hopefully, it won't.

run under GUI's (Graphical User Interfaces) is that the program has access to whatever devices are supported by the environment. Windows 3 does support colour printers (well, it supports the IBM colour printer at least) so any Windows 3 program running under it can print to any supported device.

OUT TAKES

I find that a file containing nothing but a carriage return can be extremely useful when working with batch files. Do this with: COPY CON CR [ENTER][F6]

Other responses are provided similarly.

Edmund Gates
Minehead

Thanks for the answer in the September issue concerning the slow running of **Timeworks**. 16 buffers proved optimum with the loading time dropping from 2:30 to 44 seconds. Why does the PC1512 default to 5 buffers?

EE Skeet
Sanquhar

Shortage of memory is the answer. A 512K PC running GEM and BASIC2 has only 24K or so left. Each buffer takes 0.5K, so it couldn't afford to take many.

If you get file errors when using XCOPY find the culprit fast with the line:

COPY A:*. * NUL Copying to nowhere is much faster than copying to disk.

Adel Harrison
Birkenhead

PASCAL INTERRUPTS



Interrupt access in **Turbo Pascal v4** and up uses a type declaration built into the Turbo unit DOS (functionally identical to dos.h in C). Type

```
registers=record
case of integer of
0: (ax, bx, cx, dx, bp, di, ds, es, Flags:word);
1: (al, ah, bl, bh, cl, ch, dl, dh: byte);
end;
```

A program making use of it has to declare a variable of type registers and uses the procedure intr as in the program below. This checks the total on board memory using Interrupt 12h to get the number of contiguous memory blocks and is about as short as a Turbo Pascal Interrupt routine can get.

```
program memsize;
uses dos;

var regs:registers;
    memsize:word;
    vecnum:pointer;

begin
  with regs do begin
    intr($12,regs);
    memsize:=ax;
  end;
  writeln('Memory = ',memsize,'K');
end.
```

David Harley

I've had a great wodge of mail on the subject of accessing interrupts in Pascal since Fred William's letter in issue 49, most of which are as concise and precise as this one – many thanks to all who wrote in – especially those who pointed out that Borland's technical people were being slightly tricky by ignoring function key presses. Since Turbo Pascal seems to be the most popular version of the language by far I'll probably print future examples in it as well.

The PC PLUS Fact Panel Guide

These days there's no such thing as a 'standard' PC – instead we've got a range of different disk sizes, graphics adaptors and hardware add-ons, such as mice, modems and memory boards. This makes the claim that a piece of software 'Runs on IBM Compatibles' a bit meaningless, so we're introducing a fact panel on all our reviews which shows exactly what hardware you need to run the program, and what optional equipment the program can make use of. The fact panel has four sections, as follows:

1. Display types.

This section shows the type(s) of screen display supported by the program. Remember that your PC's display type is determined by its combination of display adaptor and monitor, so for example a PC1640 will have a Hercules, CGA or EGA display depending on the MD, CD or ECD monitor in use.

The icons are as follows:

- 80x25 character text-only – runs on any IBM-compatible PC.
- Displays Hercules monochrome graphics on Hercules-compatible machines.
- Displays Colour Graphics Adaptor (CGA) quality graphics on CGA, EGA and VGA machines.
- Displays Enhanced Graphics Adaptor (EGA) quality text/graphics on EGA and VGA machines.
- Displays Video graphics Array (VGA) quality text/graphics on VGA machines only.
- Displays Multi-Colour Graphics Array (MCGA) graphics on MCGA machines.
- Displays PC1512 16-colour graphics on the PC1512 only.
- Displays Tandy Graphics Adaptor graphics on Tandy compatible machines.
- GEM Windows

Windows and GEM are both Graphical User Interfaces, which adjust automatically to make the best use of and displays. Other types may also be supported. You may need to buy Windows or GEM separately.

Programs with just a work on all IBM-compatible PCs, since all types of display adaptor support a standard text-only mode, which includes the 'IBM graphics character set' –

the boxes, lines and funny faces used by many programs. Monochrome systems may interpret colour text codes (or 'attributes') as flashing, underline etc.

Other icons refer to 'all points addressable' graphics displays, used in business graphics (e.g. Lotus-style spreadsheets), painting and drawing programs, desktop publishers, games and others.

A program may have more than one icon – for example, means that the software works with both Hercules and CGA adaptors.

2. Issue Disks

This tells you what type of floppy disk the software is supplied on.

- 5.25", 360K floppy, or 1.2Mbyte if marked '1.2'.
- 3.5", 720K floppy, or 1.4 Mbyte if marked '1.4'.

One icon means only available on that disk type (though check with your dealer)

both types supplied as standard

or 5.25 /3.5 choice – see price for details.

3. Minimum Hardware requirements

Items in this section are mandatory – either the program won't run at all without them, or would be unuseable in practice. The icons are:

- Single floppy
- Twin floppy
- Hard disk
- 80286 processor chip

- 80386 processor chip
- Mouse
- Joystick
- Matrix printer
- Laser printer (Note 1)
- Telephone line and modem
- Minimum free RAM, after MS-DOS and any resident programs are loaded.
- Expanded Memory Specification (EMS) card (see Note 2)
- Maths co-processor chip (e.g. 8087 for standard PCs, 80287 for ATs and so forth)

4. Other hardware supported

These items are not mandatory, but the program can make use of them. The icons are the same as those used in the minimum hardware section.

Notes: 1. Most laser printers will emulate Epson FX series matrix printers, so will work in basic mode with a matrix-only program. A laser driver indicates support for special fonts and high-resolution graphics. Always double check that your particular model of matrix or laser printer is supported.

2. There are various EMS standards around, the most popular being LIM EMS version 4.0. Check that your type is supported by the program.

OUR VALUE VERDICTS

Product fact boxes also contain verdict ratings, in the range 0 - 5, covering four areas of the product – Range of Features, Overall Speed, Ease of use and Documentation – plus an overall Value verdict.

These ratings are made in the context of the program's price and intended position in the market, so a £25 filler which provides good sorting facilities might get a Range of Features rating of 4, while a £600 bells-and-whistles database which couldn't import text data might be marked down to three. The overall value verdict is made on the same basis. It is quite possible for a very expensive product to be excellent value for money because it really does do the job well, while a very cheap product might be poor value because it is too lacking in features to do anything at all.